

## **REMARKS**

By this amendment, claims 1, 5, 9, 10, 11, 13, 14, 15, 16 and 19 have been amended. New claim 20 has been added. Claims 1-20 remain in the application. Support for the amendments can be found the specification and drawings. No new matter has been added. This application has been carefully considered in connection with the Examiner's Action. Reconsideration and allowance of the application, as amended, is respectfully requested.

### **Objection to the Claims**

Claims 1-19 were objected to because of informalities. As now presented, claims 1-19 have been amended, as appropriate, by changing the acronym "HF" to be fully written out as "high frequency". Objection to the claims is now believed overcome.

Claim 10 was objected to because of informalities. Claim 10 as now presented has been amended, wherein the term "neighbouring" has been written as "neighboring". Objection to the claim is now believed overcome.

### **Rejection under 35 U.S.C. §112**

Claims 5-7 and 9 were rejected to under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As now presented, claims 5-7 and 9 have been amended to clarify each of the respective claims and thereby render the same no longer indefinite. In particular, claims 5 and 9 have been amended to remove the phrases "in particular into" and "in case of" from corresponding claims. Rejection of the claims is now believed overcome.

### **Rejection under 35 U.S.C. §101**

Claim 19 was rejected to under 35 U.S.C. §101 as being directed to non-statutory subject matter. As presented herein, claim 19 has been amended, in part, to recite a computer readable medium encoded with a computer program ... , and thus

now renders the same as being directed to statutory subject matter. Rejection of the claim is now believed overcome.

### **Rejection under 35 U.S.C. §102**

Claim 1 recites a bit detector for detecting the bit values of bits of a channel data stream stored on a record carrier, wherein the channel data stream comprises a channel strip of at least two bit rows one-dimensionally evolving along a first direction and aligned with each other along a second direction, said two directions constituting a two-dimensional lattice of bit positions, said bit detector comprising:

- a photo detector for detecting light reflected from or transmitted through said record carrier in response to one or more incident light beams, each light beam being directed onto a position along said second direction, said photo detector being partitioned into at least two detector partitions for detecting part of the reflected or transmitted light and for generating partial high frequency (HF) signal values, and
- a signal processing means for determining the bit values of the bits of said channel data stream from said partial high frequency (HF) signal values.

Support for the amendments to claim 1 (as well as for claims 15 and 16) can be found in the specification at least on page 4, lines 10-17.

As presented herein, Claim 1 clearly articulates the novel and non-obvious distinct features thereof. As disclosed in the original specification on page 4, lines 10-17, "According to the invention it is proposed to detect for the given (central) bit a *vector of partial HF signals* which *gives a clue* to where the "1"-bit nearest neighbours might be *located* (along the circle with the 6 possible positions). Each possible configuration of the hexagonal cluster will lead to a *set of signals* that can be seen as a "fingerprint" for

the configuration at hand. The *HF signal vector* will match some fingerprints much better than others. Further, also at the neighbouring bits, *HF signal vectors* each comprising a number of *partial HF signals*, each in their turn match the possible fingerprints with different likelihoods. Each detector partition generates such a *partial HF signal value*.” (*emphasis added*.)

Claims 1-4, 8, and 10-16 were rejected under 35 U.S.C. §102(b) as being anticipated by Maeda et al. (US 5,491,678, hereinafter referred to as “**Maeda**”). Applicant respectfully traverses this rejection for at least the following reasons.

The PTO provides in MPEP § 2131 that  
*“[t]o anticipate a claim, the reference must teach every element of the claim....”*

Therefore, with respect to claim 1, to sustain this rejection the **Maeda** reference must contain all of the above claimed elements of the respective claim. However, contrary to the examiner’s position that all elements are disclosed in the **Maeda** reference, the latter reference does not disclose a “*photo detector* being partitioned ... for detecting part of the reflected or transmitted light and for *generating partial high frequency (HF) signal values*, and a signal processing means for *determining the bit values* of the bits of said channel data stream *from said partial high frequency (HF) signal values*” [*emphasis added*] as is claimed in claim 1. The generated “*partial high frequency (HF) signal values*” correspond to the partial high frequency (HF) signal values generated in response to detecting a respective part of the reflected or transmitted light by a corresponding detector partition. As noted herein above, the *partial high frequency signal values* are related to HF signal vectors as disclosed in the specification on page 4, lines 10-17, wherein “at the neighboring bits, HF signal vectors comprising a number of *partial HF signals*, each in their turn match the possible fingerprints with different likelihoods.” Therefore, the rejection is not supported by the **Maeda** reference and should be withdrawn.

In contrast, the **Maeda** reference discloses, for example, in column 16, lines 55-63, that the light receiving planes of the respective detectors are subdivided into four planes. Output signals derived from light receivers to the left and right sides of the detectors are used to detect a focus error signal "AF" and output signals derived from light receivers positioned at upper and lower positions of the detectors are used to obtain a track error signal "TR1". However, the **Maeda** reference does not disclose a "*photo detector being partitioned ... for detecting part of the reflected or transmitted light and for generating partial high frequency (HF) signal values, and a signal processing means for determining the bit values of the bits of said channel data stream from said partial high frequency (HF) signal values*" as is claimed in claim 1.

Accordingly, claim 1 is allowable and an early formal notice thereof is requested. The 35 U.S.C. §102(b) rejection thereof has now been overcome.

Claims 2-4, 8 and 10-14 depend from and further limit independent claim 1 and therefore are allowable as well. The 35 U.S.C. §102(b) rejection thereof has now been overcome.

With respect to claim 15, the same has been amended herein in a similar manner as with respect to the amendment to claim 1. Claim 15 is believed allowable over the **Maeda** reference for the reasons stated herein above with respect to overcoming the rejection of claim 1. Accordingly, claim 15 is allowable and an early formal notice thereof is requested. The 35 U.S.C. §102(b) rejection thereof has now been overcome.

With respect to claim 16, the same has been amended herein in a similar manner as with respect to the amendment to claim 1. Claim 16 is believed allowable over the **Maeda** reference for the reasons stated herein above with respect to overcoming the rejection of claim 1. Accordingly, claim 16 is allowable and an early formal notice thereof is requested. The 35 U.S.C. §102(b) rejection thereof has now been overcome.

### **Rejection under 35 U.S.C. §103**

Claims 17-19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Maeda et al. (US 5,491,678, hereinafter referred to as “**Maeda**”) in view of Official Notice. Applicant respectfully traverses this rejection for at least the following reasons.

Claim 17 depends from and further limits allowable independent claim 1 and therefore is allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome.

Claims 18-19 depend from and further limit allowable independent claim 15 and therefore are allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome.

### **New Claim**

New claim 20 has been added to provide for more complete claim coverage of the embodiments of the present application. Claim 20 is derived from original claim 9, which has been amended herein. Claim 20 depends from claim 9, which depends from allowable claim 1, and thus is allowable as well.

### **Conclusion**

Except as indicated herein, the claims were not amended in order to address issues of patentability and Applicants respectfully reserve all rights they may have under the Doctrine of Equivalents. Applicants furthermore reserve their right to reintroduce subject matter deleted herein at a later time during the prosecution of this application or a continuation application.

It is clear from all of the foregoing that independent claims 1 and 15 are in condition for allowance. Claims 2-14, 17 and 20 depend from and further limit independent claim 1 and therefore are allowable as well. Claim 18-19 depend from and further limits independent claim 15 and therefore are allowable as well.

The amendments herein are fully supported by the original specification and drawings; therefore, no new matter is introduced. An early formal notice of allowance of claims 1-20 is requested.

Respectfully submitted,

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a-32658.268